



# Mineral Industry Surveys

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## COBALT IN MARCH 2003

U.S. consumption of cobalt in January through March 2003 was 4% lower than consumption during the first 3 months of 2002, according to the U.S. Geological Survey. The cobalt content of U.S. imports of cobalt metals and chemicals was 35% lower in January through February 2003 than that of imports during the same period in 2002. The cobalt content of U.S. exports of unwrought cobalt and chemicals was 20% higher in January through February 2003 than that during the same period in 2002. Trade data for March 2003 will be available in a subsequent issue.

**Price**

Prices for electrolytic cobalt, in dollars per pound, from Platts Metals Week are listed below.

<u>Date</u>	<u>Price range</u>
May 15	9.00-9.90
May 22	9.80-10.25
May 29	9.80-10.25

  

<u>Month</u>	<u>Average price</u>
May	9.59

TABLE 1  
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS<sup>1</sup>

(Metric tons, contained cobalt)

Period	Metal <sup>2</sup>	Oxide and other chemical compounds <sup>3</sup>	Scrap	Total
2002:				
March	354	105	215	673
April	341	112	215	668
May	349	101	215	665
June	300	113	215	628
July	312	105	215	632
August	321	113	215	648
September	313	119	215	646
October	311	102	215	627
November	334	102	215	651
December	305	101	215	621
January-March	1,060	302	644	2,000
January-December <sup>4</sup>	3,940	1,270	2,580	7,790
2003:				
January <sup>r</sup>	318	155	168	640
February <sup>r</sup>	311	160	168	638
March	308	171	168	647
January-March	937	485	503	1,930

<sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes metal powder.

<sup>3</sup>Data may include other cobalt materials.

<sup>4</sup>Data based on monthly reports.

TABLE 2  
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE<sup>1</sup>

(Metric tons, contained cobalt)

End use	2002		2003	
	January- March	January- December <sup>2</sup>	March	January- March <sup>3</sup>
Steel	138 <sup>r</sup>	543	41	127
Superalloys	1,070 <sup>r</sup>	3,970	314	952
Magnetic alloys	96 <sup>r</sup>	374	32	98
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	180 <sup>r</sup>	747	59	174
Chemical and ceramic uses <sup>6</sup>	449 <sup>r</sup>	1,860	174	495
Miscellaneous and unspecified	75 <sup>r</sup>	300	26	79
Total	2,000 <sup>r</sup>	7,790	647	1,930

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Data based on monthly reports.

<sup>3</sup>May include revisions to prior months.

<sup>4</sup>Includes nonferrous alloys, welding materials, and wear-resistant alloys.

<sup>5</sup>Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

<sup>6</sup>Includes catalysts, driers in paints or related usage, feed or nutritive additive, glass decolorizer, ground coat frit, pigments, and other uses.

TABLE 3  
U.S. REPORTED STOCKS OF COBALT MATERIALS<sup>1</sup>

(Metric tons, contained cobalt)

Period	Industry <sup>2</sup>			Total	U.S. Government, metal <sup>5</sup>
	Metal <sup>3</sup>	Oxide and other chemical compounds <sup>4</sup>	Scrap		
2002:					
March	379	257	135	771	NA
April	368	247	134	749	NA
May	359	240	134	733	NA
June	354	231	134	719	7,100
July	362	223	134	720	6,950
August	409	231	135	774	6,890
September	422	217	135	773	6,860
October	400	214	134	749	6,800
November	388	207	135	730	6,740
December <sup>6</sup>	445	228	135	808	6,680
2003:					
January	457 <sup>r</sup>	229 <sup>r</sup>	141 <sup>r</sup>	827 <sup>r</sup>	6,360
February	433 <sup>r</sup>	217 <sup>r</sup>	141 <sup>r</sup>	792 <sup>r</sup>	6,200
March	433	214	141	788	6,170

<sup>r</sup>Revised. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Stocks reported by cobalt processors and consumers.

<sup>3</sup>Includes metal powder.

<sup>4</sup>Data may include other cobalt materials.

<sup>5</sup>Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

<sup>6</sup>Data based on monthly reports.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY<sup>1</sup>

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals <sup>2</sup>		Oxides and hydroxides		Salts and compounds <sup>3</sup>		Total cobalt content for the month <sup>5</sup>	Cobalt content, year to date <sup>5, 6</sup>
	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
2002:								
February	578,000	\$9,350,000	148,000	\$2,300,000	202,000	\$727,000	738,000	1,640,000
March	749,000	12,200,000	162,000	2,690,000	216,000	849,000	924,000	2,560,000
April	676,000	11,100,000	79,000	1,230,000	268,000	1,080,000	805,000	3,370,000
May	731,000	12,500,000	155,000	2,310,000	176,000	801,000	893,000	4,260,000
June	560,000	10,200,000	82,600	1,330,000	163,000	831,000	669,000	4,930,000
July	569,000	9,910,000	102,000	1,730,000	253,000	1,090,000	713,000	5,640,000
August	309,000	5,510,000	81,600	1,400,000	188,000	886,000	421,000	6,060,000
September	599,000	9,120,000	115,000	1,690,000	235,000	815,000	744,000	6,810,000
October	574,000	9,710,000	106,000	1,480,000	274,000	942,000	725,000	7,530,000
November	321,000	5,550,000	77,000	1,040,000	195,000	657,000	430,000	7,960,000
December	415,000	6,480,000	90,600	1,220,000	147,000	587,000	520,000	8,480,000
January-December	6,840,000	114,000,000	1,300,000	20,000,000	2,580,000	10,500,000	8,480,000	XX
2003:								
January	384,000	6,640,000	65,200	1,020,000	66,300	234,000	449,000	449,000
February:								
Australia	18,000	165,000	--	--	--	--	18,000	18,000
Belgium	13,500	519,000	28,400	346,000	--	--	33,900	69,000
Brazil	40,000	637,000	--	--	--	--	40,000	53,300
Canada	79,700	1,350,000	--	--	--	--	79,700	140,000
China	--	--	5,000	65,100	2,000	10,700	4,100	4,100
Congo (Kinshasa)	14,900	192,000	--	--	--	--	14,900	14,900
Finland	43,600	811,000	53,700	661,000	35,500	126,000	91,500	193,000
France	5,680	96,700	4,200	120,000	--	--	8,700	15,500
Germany	600	3,090	432	40,300	--	--	911	911
Ireland	1,200	239,000	--	--	--	--	1,200	5,760
Japan	342	7,270	--	--	2,800	25,600	1,040	21,600
Korea, Republic of	--	--	--	--	--	--	--	105
Luxembourg	--	--	--	--	16,700	46,900	4,520	4,580
Norway	131,000	1,970,000	--	--	--	--	131,000	172,000
Philippines	--	--	--	--	9,070	66,000	3,660	3,660
Russia	135,000	2,290,000	--	--	--	--	135,000	234,000
South Africa	20,000	290,000	--	--	--	--	20,000	20,000
Sweden	5,750	193,000	--	--	6,000	13,400	7,370	7,370
Switzerland	656	28,200	--	--	--	--	656	705
Uganda	--	--	--	--	--	--	--	5,100
United Kingdom	1,030	49,200	29,000	393,000	19,000	93,900	26,700	29,600
Zambia	--	--	--	--	--	--	--	59,000
Total	511,000	8,840,000	121,000	1,630,000	91,100	382,000	623,000	1,070,000

XX Not applicable. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder; may include intermediate products of cobalt metallurgy.

<sup>3</sup>Includes cobalt acetates, cobalt carbonates, cobalt chlorides, and cobalt sulfates.

<sup>4</sup>Customs value.

<sup>5</sup>Estimated from gross weights.

<sup>6</sup>May include revisions to prior months.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY <sup>1</sup>

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Cobalt waste and scrap		Wrought cobalt and cobalt articles	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
2002:						
February	3,650	\$154,000	2,650	\$54,200	15,300	\$932,000
March	1,420	187,000	18,400	149,000	20,900	1,080,000
April	210	6,350	15,300	124,000	33,500	1,320,000
May	3,600	144,000	13,100	107,000	29,000	977,000
June	679	24,700	21,000	161,000	13,200	855,000
July	11,400	135,000	5,780	63,600	18,900	1,060,000
August	1,860	126,000	10,000	87,900	14,100 <sup>3</sup>	811,000 <sup>3</sup>
September	21,300	241,000	20,600	168,000	14,600	779,000
October	4,680	84,800	34,700	169,000	12,300	854,000
November	200	13,900	9,310	96,000	19,300	1,010,000
December	843	45,700	6,550	100,000	16,600	960,000
January-December	56,900	1,310,000	206,000	1,720,000	231,000	11,600,000
2003:						
January	2,270	99,800	11,900	168,000	12,600	659,000
February:						
Austria	24	2,230	--	--	--	--
Belgium	--	--	1,500	32,400	1,650	71,800
Canada	--	--	--	--	1,890	280,000
France	700	24,500	--	--	993	59,400
Germany	120	4,890	--	--	3,980	42,400
India	--	--	--	--	402	8,380
Ireland	--	--	687	8,400	--	--
Japan	--	--	--	--	537	31,700
Switzerland	--	--	--	--	2	8,140
Thailand	--	--	631	2,270	--	--
United Kingdom	--	--	--	--	5,360	220,000
Total	844	31,600	2,820	43,100	14,800	722,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Customs value.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 6  
U.S. EXPORTS OF COBALT MATERIALS<sup>1</sup>

(Kilograms, gross weight of material, except as noted)

Period	Unwrought cobalt, powders, matte, waste and scrap <sup>2</sup>		Oxides and hydroxides		Salts and compounds <sup>3</sup>		Total cobalt content for the month <sup>5</sup>	Cobalt content, year to date <sup>5, 6</sup>
	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
2002:								
February	140,000	\$2,850,000	6,090	\$88,100	13,400	\$85,300	148,000	297,000
March	167,000	3,370,000	5,820	71,700	12,200	67,700	174,000	471,000
April	161,000	3,690,000	35,500	483,000	19,000	97,200	191,000	662,000
May	77,700	1,800,000	57,600	656,000	36,300	185,000	128,000	790,000
June	233,000	4,800,000	71,400	663,000	29,800	208,000	292,000	1,080,000
July	69,700	1,680,000	62,800	1,150,000	12,200	52,700	118,000	1,200,000
August	132,000	3,180,000	71,100	765,000	16,600	75,100	188,000	1,390,000
September	110,000	2,380,000	46,600	511,000	12,700	59,500	146,000	1,530,000
October	99,400	2,900,000	84,700	926,000	5,970	24,600	162,000	1,700,000
November	173,000	3,520,000	47,000	741,000	61,700	233,000	221,000	1,920,000
December	110,000	1,730,000	44,100	606,000	95,000	244,000	165,000	2,080,000
January-December	1,600,000	34,800,000	558,000	7,040,000	329,000	1,430,000	2,080,000	XX
2003:								
January	151,000	2,800,000	39,200	475,000	17,100	82,000	183,000	183,000
February	143,000	2,820,000	23,700	336,000	54,200	316,000	173,000	357,000

XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other intermediate products of cobalt metallurgy and unwrought cobalt alloys.

<sup>3</sup>Cobalt acetates and cobalt chlorides.

<sup>4</sup>Free alongside ship (f.a.s.) value.

<sup>5</sup>Estimated from gross weights.

<sup>6</sup>Year to date may include revisions to prior months.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 7  
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES<sup>1</sup>

(Kilograms, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
2002:				
February	136,000	\$3,070,000	2,900 <sup>3</sup>	\$85,000 <sup>3</sup>
March	55,300	1,710,000	575 <sup>3</sup>	16,500 <sup>3</sup>
April	106,000	2,450,000	--	--
May	74,500	2,100,000	2,910 <sup>3</sup>	49,200 <sup>3</sup>
June	68,100	2,340,000	2,610 <sup>3</sup>	25,700 <sup>3</sup>
July	87,100	2,630,000	27,700 <sup>3</sup>	110,000 <sup>3</sup>
August	83,300	2,570,000	5,290 <sup>3</sup>	70,600 <sup>3</sup>
September	90,600	2,500,000	1,780 <sup>3</sup>	20,700 <sup>3</sup>
October	60,000	1,940,000	16,300 <sup>3</sup>	87,800 <sup>3</sup>
November	51,400	1,880,000	158 <sup>3</sup>	5,450 <sup>3</sup>
December	64,700	1,650,000	10,200 <sup>3</sup>	61,000 <sup>3</sup>
January-December	923,000	26,600,000	307,000	1,310,000
2003:				
January	76,900	2,700,000	817 <sup>3</sup>	8,240 <sup>3</sup>
February	55,600	1,540,000	4,020 <sup>3</sup>	44,500 <sup>3</sup>

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Free alongside ship (f.a.s.) value.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.